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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,035	12/12/2001	Anthony D. Kurtz	Kulite-66	4041
28581	7590	12/05/2003	EXAMINER	
DUANE MORRIS LLP			HU, SHOUXIANG	
100 COLLEGE ROAD WEST, SUITE 100			ART UNIT	
PRINCETON, NJ 08540-6604			PAPER NUMBER	

2811

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/016,035

Applicant(s)

KURTZ ET AL.

Examiner

Shouxiang Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. New corrected drawings are required in this application as the proposed drawing corrections filed on September 22, 2203, has been approved. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtz'771 (US 5,955,771) in view of Kurtz'277 (US 4,222,277) and/or Kurtz'942 (US 4,025,942).

Kurtz'771 discloses an absolute pressure transducer (see Fig. 7C) and a differential pressure transducer (see Fig. 9), each comprising a piezoresistive pressure sensor (also see Fig. 2) and a glass cover member (72), wherein each of the transducers is formed with a method and material set substantially the same as that of

the first and second sensors in the instant invention, as admitted in the instant specification (see sections [002] to [004]), and the glass cover member in the differential pressure transducer has a port aperture (84).

Kurtz'771 does not expressly disclose that the two sensors can be formed together through a common wafer process, that the sensors can have a substantially same diaphragm thickness and can have two different active areas. However, one of ordinary skill in the art would readily recognize that such two types of sensors can be desirably integrated in a single transducer for measuring both absolute and differential pressures at the same time (as evidenced in the prior art such as Knecht et al., US 4,790,192; see the abstract, and col. 2, lines 32-34); and that two sensor diaphragms capable of respectively sensing absolute and differential pressures can be cost/effectively formed from a same wafer through a common wafer process, as evidenced in Kurtz'277 (see Figs. 4 and 5 for the diaphragm (capable of sensing absolute pressure) under the pizeoresistive element 16, the diaphragm (capable of sensing differential pressure) under the pizeoresistive element 18, the cover member 30, and the port aperture 31), wherein the two diaphragms have a substantially same thickness. And, one of ordinary skill in the art would also readily recognize that each of individual pressure sensors can have its own optimized active area, which can be either larger or small compared to other's, but suitable to the pressure to be sensed by it, as evidenced in Kurtz'942 (see col. 1, lines 33-52), which manifests the art-known relationship between the pressure P and the active area (or radius a) for a diaphragm with a desired/optimized design point of strain).

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Therefore, it would be have been obvious to one of ordinary skill in the art at the time the inventions was made to incorporate the common wafer process of Kurtz'277 into the transducer of Kurtz'771 with the integrated two sensors having different active areas, as taught in Kurtz'942, so that a transducer capable of sensing both absolute and differential pressures with optimized performance for each of the two sensors therein would be obtained in a cost/effective way. And, in such a collectively taught transducer, the two sensors would be naturally matched in regard to thermal properties, as it would be formed in a method substantially the same as that in the instant invention.

Regarding claim 2, one of ordinary skill in the art would readily recognize that the two sensors can be diced into two separated pieces so as to best fit the desired device layout. In addition, it is noted that it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. See *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Response to Arguments

3. Applicant's arguments filed on September 22, 2003, have been fully considered but they are not persuasive.

Applicant's main arguments include: Kurtz'942 does not teach or suggest the desirability of providing a transducer having two sensors with different active areas. In response to applicant's arguments against the references individually, it is noted that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413,

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208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Kurtz'771 expressly teaches the individual structures of the absolute pressure transducer and the differential pressure transducer, each comprising a piezoresistive pressure sensor and a glass cover member. And, as evidenced in Kurtz'277, along with Knecht et al., one of ordinary skill in the art would readily recognize that such two types of sensors can be readily and desirably integrated in a single transducer for measuring both absolute and differential pressures at the same time. Kurtz'942 (see col. 1, lines 33-52) expressly shows the art-known correlation between the pressure P and the active area (or radius a) for the diaphragm in the individual pressure sensor. Thus, each of the active areas of integrated pressure sensors is an art-recognized parameter of importance subject to routine experimentation and optimization. Therefore, it would be well within the ordinary skill in the art to make an integrated transducer, such as the one collectively taught by Kurtz'771 and Kurtz'277, with the integrated two sensors therein having different active areas according to their intended individual design points for the pressures or strains, per the teachings of Kurtz'942, in order to form a transducer capable of sensing both absolute and differential pressures with optimized performance for each of the two sensors therein.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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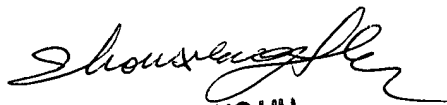
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is (703) 306-5729. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SH
December 3, 2003


SHOUXIANG HU
PRIMARY EXAMINER